IN THE CLAIMS

The claims are presented as follows:

1.   (Original) A method comprising:

receiving a time sequence of magnetic resonance images for a region, each image having a plurality of pixels and wherein a contrast agent is introduced into the region at an introduction time occurring during the time sequence;

selecting a first subset of at least one image from the time sequence of magnetic resonance images, each image of the first subset corresponding to a time prior to the introduction time;

selecting a second subset of at least two images from the time sequence of magnetic resonance images, each image of the second subset corresponding to a time subsequent to the introduction time;

calculating a mask image as a function of corresponding pixels of each image of the first subset;

calculating an arterial image as a function of corresponding pixels of each image of the second subset; and

generating a composite image as a function of a difference between each pixel of the mask image and a corresponding pixel of the arterial image.

2.   (Original) The method of claim 1 wherein receiving the time sequence includes receiving images having pixels represented by complex numbers.

3.   (Original) The method of claim 1 wherein generating the composite image includes calculating a magnitude for each pixel.

4.   (Previously Presented) The method of claim 1 further including at least one of displaying the composite image and storing the composite image.

5.   (Cancel).

6.   (Original) The method of claim 1 wherein the first subset includes at least two images
and wherein calculating the mask image includes calculating an average pixel as a function of
corresponding pixels of the at least two images.

7.   (Original) The method of claim 1 further comprising displaying, on a computer monitor,
at least one image of the time sequence of magnetic resonance images.

8.   (Original) The method of claim 7 wherein selecting includes receiving a user entered
selection corresponding to a displayed image.

9.   (Original) The method of claim 8 further including displaying the mask image as a
function of the user entered selection.

10.   (Original) The method of claim 9 wherein displaying the mask image includes
displaying the mask image in real time relative to the user entered selection.

11.   (Original) The method of claim 8 further including displaying the arterial image as a
function of the user entered selection.

12.   (Original) The method of claim 11 wherein displaying the arterial image includes
displaying the arterial image in real time relative to the user entered selection.

13.   (Original) The method of claim 8 wherein displaying the composite image includes
displaying the composite image in real time relative to the user entered selection.

14.   (Previously Presented) The method of claim 7 further including distinguishing, on the
computer monitor, at least one of each image of the first subset and each image of the second
subset.

SUPPLEMENTAL RESPONSE
Serial Number: 10/664,425
Filing Date: September 17, 2003
Title: SYSTEM AND METHOD FOR GENERATING COMPOSITE SUBSTRACTION IMAGES FOR MAGNETIC RESONANCE IMAGING

Page 4
Dkt: 1676.008US1

15.   (Cancel)

16.   (Original) The method of claim 7 further including displaying at least one image editing function corresponding to at least one image.

17.   (Original) The method of claim 16 wherein displaying at least one image editing function includes displaying, at least one of any combination, of a magnification function, a cropping function, a brightness function and a contrast function.

18.   (Cancel)

19.   (Original) The method of claim 1 further including determining the introduction time.

20.   (Original) The method of claim 19 wherein determining the introduction time includes:
        calculating a quality measure for each image of the time sequence of magnetic resonance images; and
        selecting the introduction time as a function of a rate of change of the quality measure for each image relative to the time sequence.

21.   (Original) The method of claim 19 wherein determining the introduction time includes iteratively calculating a composite image having a maximum quality measure wherein the quality measure is a function of relative intensity of selected pixels in a particular row of the composite image.

22-30. (Cancel)

31.   (Original) A method comprising:
        receiving a time differentiated series of magnetic resonance images for a region;
        selecting a subset of images from the time differentiated series, the subset including at least two images;

generating a mask as a function of a sum of the subset of images; and

generating a difference image as a function of a difference between the mask and a
selected image of the time differentiated series.

32.   (Original) The method of claim 31 wherein generating the mask includes calculating an
average.

33.   (Cancel)

34.   (Original) The method of claim 31 wherein selecting the subset of images includes
selecting images having motion artifacts less than a predetermined criteria.

35.   (Original) The method of claim 31 further including detecting an arrival time of a bolus
in the region.

36.   (Previously Presented) The method of claim 35 wherein receiving the time differentiated
series includes at least one of receiving at least one image at a time prior to the arrival time and
receiving at least one image at a time subsequent to the arrival time.

37.   (Cancel)

38.   (Original) The method of claim 35 wherein selecting the subset of images includes
selecting images occurring at a time prior to the arrival time.

39.   (Original) The method of claim 35 wherein generating the difference image includes
identifying the selected image and wherein the selected image occurs subsequent to the arrival
time.

40-52. (Cancel)